

1
2 **Claims**

3 We claim:

4
5 1. A foundry binder system, which will cure in the presence of sulfur dioxide and
6 an oxidizing agent, comprising:

7
8 (a) 45 to 80 parts by weight of an epoxy resin;

9
10 (b) 5 to 40 of ester of a fatty acid;

11
12 (c) an effective amount of an oxidizing agent; and

13
14 (d) 0 parts of an ethylenically unsaturated monomer or polymer.

15
16 wherein (a), (b), and (c) are separate components or mixed with another of said
17 components, and where said parts by weight are based upon 100 parts of binder.

18
19 2. The binder system of claim 2 wherein the wherein the epoxy resin is selected
20 from the group consisting of epoxy resins derived from bisphenol A, epoxy
21 resins derived from bisphenol F, epoxidized novolac resins, cycloaliphatic epoxy
22 resins, and mixtures thereof.

23
24 3. The binder system of claim 2 wherein the epoxy resin has an epoxide equivalent
25 weight of about 165 to about 225 grams per equivalent.

26
27 4. The foundry binder system of claim 3 wherein the epoxy resin comprises a
28 cycloaliphatic epoxy resin.

- 1 5. The binder system of claim 4 wherein the oxidizing agent is cumene
2 hydroperoxide.
3
- 4 6. The foundry binder system of claim 5 wherein the amount of epoxy resin is
5 from 50 to 70 parts by weight, the amount of ester of a fatty acid is from 15 to
6 30 parts by weight, and the amount of amount of a oxidizing agent is from 12 to
7 30 parts by weight, where the weights are based upon 100 parts of the binder
8 system.
9
- 10 7. A foundry mix comprising:
11 (a) a major amount of foundry aggregate;
12
13 (b) an effective bonding amount of the foundry binder system of claim 1, 2,
14 3, 4, 5, or 6.
15
- 16 8. A cold-box process for preparing a foundry shape comprising: ✓
17
18 (a) introducing the foundry mix of claim 7 into a pattern; and
19 (b) curing with gaseous sulfur dioxide.
20
- 21 9. A foundry shape prepared in accordance with claim 8.
22
- 23 10. A process of casting a metal article comprising:
24
25 (a) fabricating an foundry shape in accordance with claim 8;
26 (b) pouring said metal while in the liquid state into said coated foundry
27 shape;
28 (c) allowing said metal to cool and solidify; and
29 (d) then separating the molded article.

1

2 11. A casting prepared in accordance with claim 10.

3